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**ROPARD is an association dedicated to eliminating the problems of low vision and blindness
in children caused by premature birth and retinal diseases.**

Your Donation Can Make a Difference!!!

Show your concern for this cause by donating to:
ROPARD, P.O. Box 250425, Franklin, Michigan 48025

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Susan Campbell,
Editor

Paula Korelitz,
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ROPARD

Sightlines

Artificial Vision

For many years, several investigators have been working on techniques that use sophisticated information technology, such as microchip technology, to create a visual precept for people who have been blinded specifically by retinitis pigmentosa. Commonly in retinitis pigmentosa, the outer retina does not function, but the inner retina does. This feature is also common to other forms of retinal disease, such as retinopathy of prematurity, familial exudative vitreoretinopathy, retinoschisis, congenital retinoschisis, macular degeneration, and other forms of retinal dystrophies. To generate such a visual precept, a small camera is connected to a microchip device implanted on the front aspect of the retina. The microchip stimulates the inner retina with a small electrical impulse that sends a patterned message to the brain. The brain interprets the impulse as the object viewed by the camera.

This design has been pursued by many investigators around the world. Much of the work has been done by Dr. Mark Humayun, who will be the 2008 recipient of the ROPARD Children's Vision Award. Other techniques to achieve artificial vision have also been explored, one of which has been advocated by Ray Kurzweil, who will be featured at the dinner for the 2008 Children Vision Award event on May 31, 2008. Mr. Kurzweil is a futurist and will be attending the dinner and making his presentation in the form of a hologram. Following Mr. Kurzweil's comments, he and Dr. Humayun will discuss artificial vision and take questions from the audience. It is heartening to see that so many researchers are now focusing on techniques that may be able to enhance visual function for patients with low or no vision.

Vision is a function of the brain, with the eye supplying information and the brain

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SAVE THE DATE:

The Children's Vision Award and A Vision of the Future

On May 31, 2008, ROPARD will honor Dr. Mark Humayun with the Children's Vision Award for his research in developing a retinal prosthesis and his devotion to helping the blind to see. The award ceremony and dinner will take place at the Rivera Court in the Detroit Institute of Arts, Detroit, Michigan. Dinner will be followed by an extraordinary presentation by Ray Kurzweil— inventor, entrepreneur, visionary, futurist, philosopher, and author. Appearing as a hologram, Mr. Kurzweil will show how technology's accelerating power will transform us and he will provide us with his "Vision of the Future."



Artificial Vision continued

processing it into a form that can be used for visual function. This has many implications when applied to a child, who may have had only a few weeks or no period of vision prior to visual loss, as compared to an adult, who understood visual function prior to visual loss. It may be that children who have lost vision prior to any significant visual experience will need to be educated in terms of interpretation of visual precepts. These issues will need to be dealt with as the technology evolves, and they will provide significant challenges, but the degree of success to date is extremely encouraging.

Yael Helena Korc

Yael was born, rosy and kicking, in Lima, Perú on New Year's Eve 2002, fifteen weeks early. Being the youngest and lightest preemie ever born in that clinic, at 740 grams (1.63 lb) it was as monumental an event for the hospital as it was for her parents, Rebecca and Marcelo Korc.

It was fortunate that Lima had an ophthalmologist experienced in ROP. Yael had hemorrhages in her retinas from birth. At six weeks, the disease had progressed to stage 3 plus. The doctor performed laser surgery; two months later placed scleral buckles, and a year later recommended that Yael see Dr. Trese. Even though Yael's ROP had progressed to stage 5, the vitrectomies performed by Dr. Trese were necessary in preserving her eye health. Since then, the Korcs make the trip to Detroit twice a year. In addition to eye checkups, they visit The Children's Low Vision Resource Center, where they stock up on advice, assurances and support from Paula Korelitz.

Yael has light perception and projection and exhibits some visually oriented mobility. However, she shows a much stronger preference for her other senses. She touches anything and everything—to feel more—to hear



more. She loves to examine everyone up close, hugging and kissing kids and adults alike. Her family hopes that the strength and affection that flows through Yael will break down any barriers that she may confront.

Fiercely independent, Yael began walking at age two using a bamboo cane. Now at age four, she can go up and down steps unassisted, dress herself with some assistance and get around home and school independently. She attends a regular preschool with kids her own age. She wants to learn everything, having a sense of logic that goes well beyond her years. She is fluent in English and Spanish and changes languages when she needs to. She is excited to be learning Braille. Yael takes yoga, swimming and music classes and she helps in the kitchen. She adores animals, talking to her grandma on the phone, playing with her baby brother, Itai and her sister, Noa. Everyone is extremely proud of Yael.

A Vision of the Future 2008 Pediatric and Adult Retina Update

Sponsored by ROPARD and Associated Retinal Consultants, **A Vision of the Future, 2008: A Pediatric and Adult Retina Update** will take place in May 2008 at the Dearborn Inn in Dearborn, Michigan. **The Pediatric Retina Meeting**, on Friday, May 30, 2008, will be led by ROPARD Lecturer, Dr. Mark Humayun. Guest faculty also includes: Dr. David Coats and Dr. William Good. **The Adult Retina Meeting** takes place on Saturday, May 31, 2008. Dr. Andrew P. Schachat is the Nachazel Lecturer.

Faculty from Associated Retinal Consultants will attend both meetings and will include Dr. Thomas M. Aaberg, Dr. Antonio Capone, Jr., Dr. A. Bawa Dass, Dr. Kimberly Drenser, Dr. Bruce R. Garretson, Dr. Tarek S. Hassan, Dr. Alan R. Margherio, Dr. Amy S. Noffke, Dr. Paul V. Raphaelian, Dr. Alan J. Ruby, Dr. Ramin Sarrafizadeh, Dr. Michael T. Trese, Dr. George A. Williams and Dr. Sunita Yedavally.

The Scientific Program will be followed on May 31, 2008 by The Children's Vision Award dinner at the Detroit Institute of Arts.

Register on line at www.beaumont.edu for the Scientific program and at www.ropard.org for the dinner and presentation.

Recipient of 2008 Children's Vision Award: Mark Humayun, MD, PhD

ROPARD is honored to present Dr. Mark Humayun with the Children's Vision Award for his work to develop a system for artificial vision.

Dr. Humayun is Professor of Ophthalmology at the Keck School of Medicine and Associate Director of Research at the Doheny Eye Institute at the University of Southern California. He holds a PhD in



Biomedical Engineering. His clinical interests include macular degeneration, diabetic retinopathy, retinal detachment and retinal vascular occlusive disease. His research interests include: electrical stimulation of the retina, retinal prosthesis, retinal disease, retinal transplantation and instrumentation for vitreoretinal surgery.

Dr. Humayun combines knowledge of the visual systems of the eye with advanced electronics and engineering to implant a retinal prostheses which takes the place of retinal cells damaged by disease. He leads a team of researchers currently refining both materials and techniques to move toward a clinical application that can be made more widely available. In 2005, R&D Magazine named Dr. Humayun "Innovator of the Year" for his work on retinal implants.

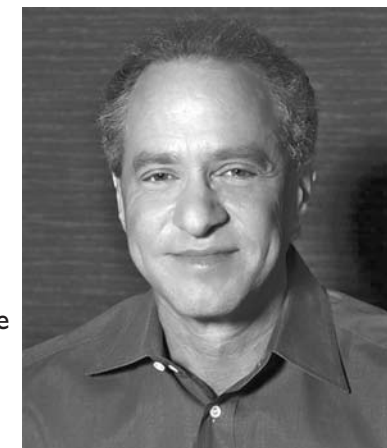
Fundraising in Ohio and Michigan

In Ohio, the Trinity Rose Foundation held its second golf outing on September 17, 2007 at Cherokee Hills Golf Club at Valley City. The Foundation was set up to provide financial assistance to individuals with eye disorders and their families and to support innovative research and medical advances focused on curing childhood eye disorders. The 2007 recipients are Kelsey Nicolay and David Ziegler both of Medina Ohio and Raina Grace. ROPARD was honored to receive the medical research grant.

The seventh annual 12 pack open golf outing on May 19, 2007 at Antrim Dells in Atwood, Michigan was another success. The weather was a little cool but the rain held off and by the end of the day it was sunny. As always everyone who attended had a great time and promised to return next year. Players from all over the state participated with donations from as far away as England.

Ray Kurzweil and A Vision of the Future

Internationally renowned futurist **Ray Kurzweil** will present his views on the future of vision at the ROPARD Children's Vision Award celebration. He will appear as a fully interactive hologram.



Ray Kurzweil is the consummate Renaissance man—author, scientist, entrepreneur and inventor. In his three bestselling books he makes out-of-this-world predictions based on the explosive growth of real-world technology. The amazing accuracy of his predictions has established his credibility as a futurist.

Three common threads unite many of Mr. Kurzweil's inventions: pattern recognition, artificial intelligence and commercial practicality. His interest in and development of optical character recognition technologies ultimately led to speech recognition programs which made the "Blind Reader" of 2005 possible—a device he predicted in 1990. A meeting with Stevie Wonder inspired him to create a new generation of music synthesizers (Kurzweil Music Systems). Other programs can be used to train physicians, poets and graphic artists. Nanotechnology, in his view, has the potential to solve both global environmental problems and to transform the way we treat disease.